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| 10/505,434 | 03/17/2005 | Hideyuki Yamamoto | OGA-009 | 3968 |

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| EXAMINER | |
|---|---|
| HILL, LAURA C | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3761 | |

DATE MAILED: 06/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/505,434 | YAMAMOTO ET AL. | |
| | Examiner | Art Unit | |
| | Laura C. Hill | 3761 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *31 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-33 (see Remarks pages 13-19) Applicant's arguments, see pages 13-19 Remarks, filed 31 March 2006, with respect to the rejection(s) of claim(s) 1-11, 13-19, 21-30 and 33 under Mishima (US 5,885,267), claim 12 over Mishima in view of Guarracino et al. (US 6,080,908), claim 20 under Mishima in view of Fujioka et al. (US 6,056,732), claim 28 over Mishima in view of Rosch et al. (US 4,585,450), claim 31 over Mishima in view of McBride et al. (US 5,217,803), and claim 33 over Mishima in view of Lustberg (US 2,115,368) have been fully considered and are persuasive. It is noted that Applicant's arguments are based upon amendments to the claims. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kyoko (JP 01-097255), Barge et al. (US 5,989,688), and Dragoo et al. (US 5,486,167) as discussed below.

**2.** Support for the amendments can be found on page 4, paragraph 0012, page 15, paragraph 0036 (claim 1) and page 24, paragraph 0053, page 13, paragraph 0029 (claim 11), page 16, paragraph 0037 (claim 14), and paragraph 0010 (claim 34).

### *Specification*

3. The title of the invention has been changed to the following: Washable and Reusable Body Fluid Absorbing Product Including Water-Absorbing Component Synthetic Non-Woven Fabric.

***Claim Language Interpretation***

4. The 'each of the fabric layers comprising fibers having a fineness in the range of 0.01 dtex to 2 dtex' as recited in lines 5-6 of claim 1 has been interpreted to mean that at least some of the fibers in the fabric layers that comprise the water-absorbing component have a fineness in the recited range.

***Claim Objections***

5. The claim objections have been removed based on Applicant's amendments.

***Claim Rejections - 35 USC § 112***

***6.*** The claim rejections under 35 U.S.C. 112, first paragraph have been removed based on Applicant's amendments.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-11, 13-14, 17-19, 21-27, 29-30, and 34 are rejected under 35 U.S.C. 103(a) as obvious over Kyoko (JP 01-097255; herein 'Kyoko') in view of Barge et al. (US 5,989,688; herein 'Barge'). Regarding claims 1-2 and 24 Kyoko discloses a body fluid absorbing diaper comprising: a water-absorbing component having a plurality of synthetic non-woven fabric layers/water retaining sheet and auxiliary material with fibers having a fineness of 1-2.5 denier; wherein the body fluid absorbing product has excellent resistance to washing and water-holding capacity (abstract). Kyoko *does not expressly disclose* a breathable top sheet. **Barge** discloses a composite non-woven for use in hygiene absorbent products (column 2, lines 44-48) having a breathable water-

repellent polypropylene support layer/top sheet (column 4, lines 33-39 and column 6, lines 17-28) and a water-absorbing component/first and second bulky layers having fibers having a fineness of 1.7 dtex (column 17, lines 6-17) for improved liquid control, strength, and softness (column 6, lines 29-32) and good distribution and utilization of the core (column 7, lines 1-3). One would be motivated to modify the diaper of Kyoko with the breathable top sheet of Barge for improved user comfort since the references are in the same problem solving area—multi-layered composites with enhanced liquid-holding capacity for use in hygiene products. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the diaper, thus providing a breathable top sheet.

Regarding claims 3-10, 13, 23, 25-27, and 29-30 Barge further discloses a coating agent on the surface of the fibers to render them hydrophilic (column 7, lines 39-45). Kyoko/Barge inherently disclose compressibility, density, void volume, thickness, water absorbency, water absorption rate, area weight, shrinkage factor, top sheet air permeability, back sheet hydraulic pressure, or back sheet water vapor permeability values since Kyoko/Barge disclose the body fluid absorbing product as discussed above with respect to claim 1. The discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not expressly disclose not render the old composition patentably new to the discoverer. *Atlas Powder Co. v. Ireco Inc.,* 190F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is

inherently present in the prior art does not expressly disclose not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977).

Alteratively, compressibility, density, void volume, thickness, water absorbency, water absorption rate, area weight, shrinkage factor, top sheet air permeability, back sheet hydraulic pressure, and back sheet water vapor permeability values are result-effective variables since they are at least dependent on the absorbing product size and number and types of fibers used in the various layers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kyoko/Barge with the aforementioned values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch and Slaney*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 11 and 34 Barge further discloses at least one of the synthetic layers/ the first bulky layer has bi-component polypropylene/polyethylene disintegrated by water jet treatment (column 17, lines 6-17) {Examiner is assuming the limitation of 'disintegrated by water jet treatment' is given patentable weight.} [Note polypropylene is a polyolefin and applicant has listed polyester-polyolefin as a water separable compound fiber on page 13, paragraph 0029 of the instant specification.]

Regarding claim 14 the method of forming the device (i.e.: 'water-absorbing component has been subjected to a preliminary shrinkage heat treatment in hot water at 80C or more) is not germane to the issue of patentability of the device itself. Therefore, this limitation has been given little patentable weight. However assuming this limitation is given patentable weight, Kyoko/Barge inherently have the absorbent component

subjected to any type of heat treatment since where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

Regarding claims 17-19 and 21-22 Kyoko discloses the denier of the thread constituting the surface is 1.5 to 5.5 times that of the thread constituting the back face with the compact layer having a lower porosity than that of the inner side on both the surface and the back face (abstract). Kyoko/Barge *do not expressly disclose* the diffused area differences between the inner and outer faces or the water absorption rate *when 0.1 ml droplet* is placed on the inner face or the fineness values of the fiber not in contact with the water-absorbing component in relation to the fiber in contact with the water-absorbing component. The diffused area differences between the inner and outer faces and the water absorption rate are result effective variables since they are at least dependent on the size of the layers, overall article size and type of liquid placed on the surfaces of the layers. Fineness values of the fiber not in contact with the water-absorbing component in relation to the fiber in contact with the water-absorbing component are result effective variables since they are at least dependent on the size of the layers and overall article size and types of fibers used in the layer construction. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify Kyoko/Barge with diffused area differences between the inner and outer faces, water absorption values, and fineness values for varying porosity of the

layered surfaces since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch and Slaney*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kyoko (JP 01-097255; herein 'Kyoko') in view of Barge et al. (US 5,989,688; herein 'Barge'), and further in view of Guarracino et al. (US 6,080,908; herein 'Guarracino'). Kyoko/Barge *do not expressly disclose* the synthetic non-woven fabric layers are antibacterial. **Guarracino** discloses boric acid and sodium tetraborate or well-known materials such as zeolites as odour control materials incorporated into one of the layers the absorbent core 3 of body fluid absorbing articles such as diapers and sanitary napkins to inhibit growth of microorganisms responsible for the release of unpleasant odours (col. 1, ll. 17-22, col. 2, ll. 66-67, col. 3, ll. 16-23 and ll. 49-52, col. 5, ll. 40-41). One would be motivated to modify the non-woven fabric layers in the absorbent of Kyoko/Barge with the odour-controlling agent of Guarracino to inhibit growth of microorganisms since both references disclose multi-layered absorbing components for use in personal hygiene articles. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the non-woven fabric layers, thus providing an antibacterial agent.

9. Claims 15-16 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyoko (JP 01-097255; herein 'Kyoko') in view of Barge et al. (US 5,989,688; herein 'Barge'), and further in view of Dragoo et al. (US 5,486,167; herein 'Dragoo'). Regarding claims 15-16 Kyoko/Barge *do not expressly disclose* an additional water-draining layer

having fibers with the fineness in the range claimed. **Dragoo** discloses a diaper having absorbent layers with a blend of different type of fibers for improved integrity and liquid processing (column 4, lines 54-59) with multi-layer absorbent structure 28 positioned between impervious back sheet 26 and pervious and hydrophilic top sheet 24 (column 5, lines 5-10, column 6, lines 57-60), said multi-layer absorbent structure 28 having acquisition layer/water draining layer 30, intermediate liquid stable layer 34 (column 10, lines 39-41) and absorbent core 32 (column 5, lines 11-16), the acquisition layer having bi-component fibers with a fineness of 1.5 –30 denier per fiber (column 8, line 64-column 9, line 1). One would be motivated to modify the product of Kyoko/Barge with the water draining layer having claimed fineness range for improved liquid channeling during use since the references are analogous art; multi-layered composites having fine fibers for use in personal hygiene articles. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the product, thus providing an additional draining layer.

Regarding claim 33 Kyoko/Barge *do not expressly disclose* a structure to prevent side leakage. **Dragoo** discloses elasticized side panels 36 and elasticized leg cuffs 38 that prevent side leakage (column 5, lines 18-21). One would be motivated to modify the product of Kyoko/Barge with the side leakage prevention structure since the references are analogous art; multi-layered composites having fine fibers for use in personal hygiene articles. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the product and thus providing a side leakage leg cuff.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kyoko (JP 01-097255; herein 'Kyoko') in view of Barge et al. (US 5,989,688; herein 'Barge') as applied to claim 1 above, and further in view of Fujioka et al. (US 6,056,732; herein 'Fujioka'). Kyoko/Barge *do not expressly disclose* an inner face of the top sheet with irregular surface or peak difference values. **Fujioka** discloses diaper 15 having a plurality of thin parts/irregular surfaces 23a, 23b, 23c present on the top sheet 17 that contact the user's skin and readily disperses urine over the absorbent core (col. 4, ll. 56-65, col. 7, ll. 40-43, col. 9, ll. 1-6, figure 2B). One would be motivated to modify the top sheet of Kyoko/Barge with the irregular surfaces of Fujioka to improve urine dispersing since both references disclose improved liquid absorbing and distributing components for sanitary hygiene products. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the top sheet, thus providing irregular surfaces at the inner skin-contacting face of the top sheet.

11. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kyoko (JP 01-097255; herein 'Kyoko') in view of Barge et al. (US 5,989,688; herein 'Barge'), and further in view of Rosch et al. (US 4,585,450; herein 'Rosch'). Kyoko/Barge *do not expressly disclose* the top sheet/water-absorbing component 2 is disposed between the top sheet 3 and back sheet. Rosch discloses it is well known that disposable diapers of the type widely used today, generally comprise a three layer composite structure including a liquid-permeable bodyside liner, a liquid-impermeable outer cover and a batt of absorbent material sandwiched between the liner and the outer cover (col. 1, ll. 13-21). Therefore, it would be obvious to one of ordinary skill in the art at the time the

invention was made to modify the layers of Kyoko/Barge to dispose the absorbing component between the top and back sheets. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the layers, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167.

12. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kyoko (JP 01-097255; herein 'Kyoko') in view of Barge et al. (US 5,989,688; herein 'Barge'), and further in view of McBride et al. (US 5,217,803; herein 'McBride'). Kyoko/Barge *do not expressly disclose* a back sheet with an anti-skid member. **McBride** discloses disposable absorbent articles such as diapers and sanitary napkins comprising a blended back sheet material that may contain other known components such as antistatic and slip agents (col. 1, ll. 7-12, col. 3, ll. 35-37, col. 7, ll. 45-51). One would be motivated to modify the back sheet of Kyoko/Barge with an anti-slip member to provide a better fitting garment since both references disclose absorbent articles for sanitary hygienic purposes. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the back sheet, thus providing an anti-skid member.

13. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kyoko (JP 01-097255; herein 'Kyoko') in view of Barge et al. (US 5,989,688; herein 'Barge'), and further in view of Lustberg (US 2,115,368; herein 'Lustberg'). Kyoko/Barge *do not expressly disclose* the layers are sewn together with a water-repellent thread. **Lustberg** discloses waterproof layers are joined together by a watertight seam that render the

entire structure watertight, strong, and durable (col. 1, ll. 4-6 and 32-35). One would be motivated to modify the layer attachment mechanism of Kyoko/Barge with the watertight sewn seam of Lustberg to provide an entirely waterproof article and since both references are in the same problem-solving area; attaching or joining multiple layers together. Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the bond between layers, thus providing a water repellent thread attachment mechanism.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mori et al. (JP 2003265532) is cited for showing an underpants-style diaper that blocks the leakage of moisture and a wet feeling by providing an absorbent material made of synthetic fiber and having a fineness of 0.01-2 decitex.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura C. Hill whose telephone number is 571-272-7137. The examiner can normally be reached on Monday through Friday (off every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tatyana Zalukaeva can be reached on 571-272-1115. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Laura C. Hill
Examiner
Art Unit 3761

TATYANA ZALUKAEVA
SUPERVISORY PRIMARY EXAMINER

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LCH